

## JIG DESIGN

fixed in position on the table but may be adjusted radially when necessary to bring them into the correct position for the other size of bracket. The jaws are provided with set-screws *O* which are adjusted to support the overhanging end of the bracket, after which they are locked by the check-nuts at *P*. The jaws are keyed at *S* to the sub-jaws of the table; and the clamps *N* are used on the unfinished portion of the bracket, being tightened by the nuts at *R* so that the surface to be machined is clear of interferences. The boring-bar *L* is used to bore the hole and the side-head tool *M* faces the pad. This is another example of a table being used with a faceplate having adjustable moving parts on it.

Adjustable Fixture for a Bronze Worm-gear Sector. The fixture shown in Fig. 7 was designed to handle three sizes of the bronze worm-gear sectors *A*. The base *B* of the fixture is centered on the table by means of the stud *G* in the center hole, and it is clamped securely by means of three screws *P* which enter shoes in the table T-slots. An adjustable V-block *C* is mounted on a finished pad and tongued on the under side to fit the slot *D*. All the jaws on the table chuck are removed and a special jaw *K* is substituted for one of them. This jaw is slightly under-cut on its face to assist in holding down the work, and at the same time it forces the hub of the casting up into the vee locating block. A slot *O* is cut in the base of the fixture in order to allow the necessary movement, for this jaw. The hub rests on a headless set-screw // which is tapped into the base, and two other adjusting screws are provided at *J*. These are adjusted by means of a wrench after the jaw has been tightened. The set-screw //, however, remains set after it has been adjusted to suit the particular piece which is being machined. A driving screw at *L* takes the thrust of the cut and may be removed and placed in either of the holes *I* or *N* when used for the other pieces. In setting the V-block for another diameter of hub, it is only necessary to loosen the screws *P* and move the block radially to the desired position. The jaw *K* is readily set to size while the screws *I* and *L* are placed in holes provided for them.